BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
Revision of the Commission's Rules	)	CC Docket No. 94 -102
To Ensure Compatibility with	)	RM-8143
Enhanced 911 Emergency Calling Systems	)	

REPLY COMMENTS OF ERICSSON

Ericsson Inc ("Ericsson") hereby submits reply comments in response to the Federal Communications Commission's ("Commission") Further Notice of Proposed Rulemaking ("E911 FNPRM"), released May 25, 2001, to examine further the issue of non-service-initialized mobile wireless phones used to make 911 calls. In particular, the Commission sought comment on whether it should require such phones to incorporate call back capabilities so that Public Safety Answering Points ("PSAP") could initiate a return call to the non-initialized phone. As the initial comments demonstrate, call back capability cannot be achieved except through complex and costly system and network modifications. Further, the solutions proposed, such as using Temporary Local Directory Numbers ("TLDNs"), pseudo numbers, or Mobile Identification Numbers ("MINs"), carry significant costs in the form of number exhaustion, increased risk of fraudulent phone usage, and diversion of resources from compliance with other important initiatives, like E911 Phase II.

As even the proponents of call back capability recognize, the true need for such capability is limited. The regulatory response to a demand for call back capability should be reasonable. The Commission should weigh the cost of implementing call back

capability versus the potential benefits to be gained from such capability. Based on the facts of record, imposing significant technical, operational, and financial burdens on carriers and manufacturers to address a need for call back capability that is actually quite limited in scope is not reasonable. For these reasons, Ericsson advocates a public education campaign to advise the public of the limitations of non-initialized phones instead of a complex and expensive regulatory scheme to equip such phones with call back capabilities.

I. BACKGROUND

In 1997, the Commission issued its mandate for carriers to forward all 911 calls, even those from telephones that were not service-initialized, to the PSAP.[1] At that time, the Commission recognized that call back capability might not be available for non-initialized handsets.[2] For this reason, the Commission limited carriers' obligations for non-initialized phones to delivering the 911 call to the PSAP.[3]

In response to a more recent request from the Public Safety Entities, the Commission issued the instant E911 FNPRM to revisit the issue of mandating 911 call back capabilities. The Public Safety Entities asserted that circumstances had changed since the Commission issued its original mandate and that technical solutions now exist to permit PSAPs to call back non-initialized phones.[4] Implicitly agreeing with this contention, the Commission tentatively concluded in its E911 FNPRM that all carrier-

[1] *See Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, RM-8143, *Report and Order and Further Notice of Proposed Rulemaking,* ¶ 29-42 (1996) and *Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, CC Docket No. 94-102, RM-8143, *Memorandum Opinion and Order,* ¶ 108-110 (1997) ("*E911 First Memorandum Opinion and Order")*.
[2] E911 FNPRM at ¶ 2.
[3] *E911 First Memorandum Opinion and Order* at ¶¶ 108-110.
[4] E911 FNPRM at ¶ 3.

donated handsets and all newly manufactured 911-only handsets should be labeled and should provide for return calls from the PSAP.[5] On July 9, 2001, the Commission received initial comments from interested parties both supporting and refuting the Commission's tentative conclusions.

II. A SIMPLE, COST-EFFECTIVE TECHNICAL SOLUTION THAT ALLOWS CALL BACK CAPABILITY DOES NOT EXIST

A thorough review of the initial comments reveals that call back capability cannot be achieved through a simple, cost-effective technical solution. The varied operating platforms in use present unique challenges, which make developing a cost effective technical solution for call back capability quite complicated. Specifically, TLDNs, pseudo numbers, or MINs are not economically viable options. In order to provide call back capability that is operational and reliable, these options would require a substantial, system-wide change in network call processing procedures, software and hardware modifications, and alteration of established industry standards. Moreover, the costs of these options reach beyond purely financial costs. They also impact scarce numbering resources, the ability to prevent fraud, and progress on other important initiatives.

A. TLDNs, Pseudo Numbers And MINs Are Not Good Choices For Providing Call Back Capabilities

In its E911 FNPRM, the Commission explores the possibility of using TLDNs, pseudo numbers, or MINs to provide call back capability for non-initialized phones. TLDNs, pseudo numbers, and MINs, however, do not provide viable options for call back functionality, particularly in a GSM environment. Therefore, they are not good choices as the mechanisms for enabling PSAPs to call back initialized phones.

[5] E911 FNPRM at ¶ 4.

Initialized GSM handsets operate with a Subscriber Identity Module ("SIM"), which contains specific information regarding a subscriber, including the phone number assigned to a handset. The SIM works in connection with the International Mobile Subscriber Identity (IMSI), which is the mechanism that provides the requisite information to enable the handset to place and receive a call. GSM handsets that are not initialized do not have a functional SIM to recognize a temporarily assigned number. Therefore, a handset without a SIM does not "know" what number it is and cannot recognize a page for the number temporarily assigned to it. Thus, the assignment of any number to a SIMless handset, regardless of how it is assigned, will not allow the phone to receive a call back from a PSAP.

The GSM network platform was expressly and carefully designed to prevent SIMless handsets from completing any calls other than emergency 911 outgoing calls or from receiving incoming calls. This step was taken to combat the previously widespread problem of phone "cloning" and other fraudulent phone usage. To permit call back capability, alterations to several aspects of the GSM network and handsets would likely be required. These modifications would unacceptably reopen the door to unlawful phone usage.

As the North American GSM Alliance notes in its comments, some commenters suggest that, irrespective of the existence of a SIM in a GSM handset, the International Mobile Equipment Identity ("IMEI"), a permanent part of the handset, should be modified to allow for call back capability.[6] This proposal is not feasible. Changing the fundamental function of the IMEI would require extensive modifications to handsets as

[6] *See* Comments of The North American GSM Alliance, LLC, filed July 9, 2001, at pg. 3.

well as to the entire operation of a GSM network. Modifications would also take several years to effectuate and would require carriers to siphon financial and engineering resources from other important initiatives, like E911 Phase II compliance, to make the very substantial investment needed for such a complicated network change.

A further limitation of the TLDN option is that the pool of TLDNs currently used for roamers is of a limited size. At present, a relatively small number pool exists because each TLDN is used only for call completion (approximately 20 seconds). The limited life of these numbers allows the numbers in the pool to be regularly recycled. If TLDNs were to be diverted for call back purposes, the structure of this resource would have be to radically altered. For example, the pool of numbers would have to be greatly augmented to have sufficient numbers in reserve to service an unknown number of users. The numbers would also have to be available to the assigned user for an extended but unknown period of time.

The size of the TLDN pool is also affected by other factors. An assigned TLDN must be within the valid directory number range of the HLR[7] that serves the local switch where a 911 call originates. The TLDNs reserved for one local switch must be different from those reserved for other switches served by the same HLR. As a result, the TLDN pool must be significantly increased. Expansion of the number pool would likely lead to number exhaustion, especially with the implementation of wireless local number portability.[8] Further, to use TLDN, costly alterations to the mobile switching software

[7] The HLR is the Home Location Register to which a user identity is assigned for record purposes such as subscriber information (*e.g.*, electronic serial number, mobile director number, profile information, current location, authorization period).

[8] *See* Comments of the Cellular Telecommunications & Internet Association, filed July 9, 2001, at pg. 7 (detailed discussion of the complications of using TLDNs once wireless portability is in place).

may be necessary. Therefore, the use of TLDNs to provide call back is not an appropriate or viable option.

For similar reasons as set forth above, the pseudo number or MIN alternative is not a viable option either. The FCC's concern that assignment of a unique telephone number, or MIN, to a non-initialized phone would "exacerbate the scarcity of numbering resources" is legitimate.[9] Indeed, as with TLDNs, the assignment of MINs or pseudo numbers to all non-initialized phones would cause a serious number shortage because so many numbers would be needed.

Moreover, in order to even use "pseudo numbers," comprehensive and complicated network changes would have to be completed in order to adapt call routing processes to recognize and transmit calls bearing new "pseudo numbers." As part of these network changes, the entire industry would have to work toward accepting pseudo numbers and would have to *develop* standards and specifications for their use. This alternative, like the others discussed by commenters, would be a costly and time-consuming endeavor.

B. A Call Back Requirement Would Impact Industry Standards

If the FCC were to require call back capability either through TLDN, pseudo numbers, or MINs, it would also be necessary for the industry to *alter* standards already developed to comply with and advance wireless E911 goals. For example, through significant, cooperative efforts, industry participants have developed important standards,

[9] E911 FNPRM at ¶ 12.

such as J-STD-036[10] (Wireless Advanced E911 Phase II) and ANSI-41.[11] Any solution, such as the options proposed, that impacts any one of the messages and/or parameters already standardized would be a time-consuming option to implement.

Ericsson, along with carriers, other manufacturers and public safety interests support standardization efforts for public safety and are committed to these endeavors. Implementation of any of the proposed options would involve considerable coordination efforts from carriers, network providers, and handset manufacturers to redefine the standards. As a result, creating new or altering existing standards would inevitably take several months or even years to complete. These efforts would unavoidably delay the ongoing implementation of E911. Because the TLDN, pseudo number, and MIN options would impact industry standards already in place, these options do not offer cost-effective or readily deployable responses to the demand for call back capability.

III. COMPREHENSIVE PUBLIC EDUCATION IS A BETTER CHOICE

As the FCC recognizes, it must balance the projected costs of implementing any call back mechanism with its respective benefits to public safety.[12] When the true need for call back capabilities for non-initialized phones is examined, it is clear that a costly technical "fix" is not the answer. As the Commission readily acknowledges, there is minimal data in the record on the actual percentage of wireless calls from non-initialized phones that have required call back by a PSAP.[13] The comments submitted do not

[10] *See* T1/TIA Joint Standard J-STD-036, July, 2000. Generally, J-STD-036 sets forth specifications for routing 911 calls from wireless phones and transferring information about the call to the PSAP.
[11] *See* EIA/TIA Standard ANSI-41 Rev. D, December, 1997. ANSI-41 establishes the standard origination request operation (ORREQ) that is used to request call origination treatment on behalf of a registered mobile subscriber. Since TLDN, pseudo numbers, and MIN options would all rely on ORREQ to place a call, this standard would also be impacted.
[12] E911 FNPRM at ¶ 7.
[13] E911 FNPRM at ¶ 6.

provide any further data to the Commission. Thus, it is not well established that any technical "fix" whatsoever is warranted, or that the benefits of call back capability outweigh the costs.

More than three years ago, interested parties participating in the Wireless E911 Implementation Ad Hoc Group ("WEIAD") concluded that any solution to the absence of non-initialized telephones' call back capabilities should be "proportional to the problem."[14] At the time this conclusion was reached, WEIAD agreed that "if the percentage of situations where there is no call back capability is already low (possibly under 2%) there may be little or no justification for further actions."[15]

Presently, there is no data before the Commission which suggests that the current need for call back capability is any greater than the "less than 2%" estimate in 1998. Indeed, in its comments, WCA reiterated its estimate of the need for call back -- less than 2% of the time for 911 calls and an even lower percentage for non-initialized phones.[16] The comments of SecureAlert, Inc. characterized the 2% estimate of when call back would be useful as "generous."[17] In its comments, Sprint PCS notes that, from the time of the WEIAD conclusion to the present, there has been no empirical evidence presented that there is even a call back "problem."[18] In light of the distinct lack of objective evidence demonstrating a substantial need for or substantial benefit of call back

[14] *See* Sprint PCS Comments, filed July 9, 2001 ("Sprint Comments"), at pg. 4, (citing, Report of CITA, PCIA, APCO, NENA, NASNA, Alliance, Docket No. 94-120 at 16-17 (January 30, 1998)).
[15] *Id.*
[16] *See* Comments of the Wireless Consumers Alliance, Inc. ("WCA"), filed July 9, 2001, at pg. 3.
[17] *See* Comments of SecureAlert, Inc., filed July 7, 2001, at pg. 6.
[18] Sprint Comments at pg. 4.

capabilities for non-initialized phones, a comprehensive public education campaign would be a more rational and reasonable response by the Commission to this issue.[19]

The goal of such a campaign would be to advise the public fully of the limitations of using any non-initialized phone, including a newly manufactured 911-only phone, to call 911. Through public education, the Commission can ensure that users of non-initialized phones are made aware that they must provide their location information to the PSAP at the beginning of a call or call back the PSAP if they are disconnected. Public education efforts can also be implemented relatively easily at the point of distribution of a phone (either donation or sale) as well as through general media channels.

In addition, a public education campaign is the only solution that will ensure that the extremely valuable donation programs continue to exist and E911-only phones remain accessible to the broadest range of users. Indeed, a public education effort is the only solution that keeps the overall cost of donation programs and E911-only phones low. Even seemingly minor modifications may cause the cost of preparing phones for donation programs and manufacturing E911-only phones to rise unacceptably. As a result, the broad availability of donated and E911-only phones could be compromised. For these reasons, implementation of a comprehensive public education program is a more appropriate and better choice to address the E911 call back issue.

IV. CONCLUSION

Based on the foregoing, there is no technically feasible method of providing call back capabilities for non-initialized phones that can be implemented without significant costs. The costs of TLDNs, pseudo numbers, and MINs are exacted in the form of

[19] Ericsson does not dispute that in some instances call back capability is extremely valuable, but when viewed in the aggregate, the data reflects that the overall need for call back capability is quite small.

complicated and expensive network and software modifications, diversion of resources, number exhaustion, increased risk of fraud, and the inability of industry to focus fully on other priority initiatives. Further, the proposed solutions disrupt advances already made by industry in establishing wireless 911 call standards and specifications.

In light of the relatively limited need for and benefit of call back capabilities to non-initialized phones, the development of a comprehensive public education campaign to advise the public of the limitations of non-initialized phones is a preferable strategy to address the call back issue. In this way, the Commission can ensure that consumers are made aware of the limitations of non-initialized phones, that these phones continue to be broadly available to consumers in need, and that a reasonable balance between the needs of consumers and those of the industry is achieved. For these reasons, imposition of TLDN, pseudo number, or MIN to provide call back capabilities would be detrimental to the significant progress industry has made thus far in working toward standards, specifications, and a cooperative approach to the E911 mandate.

Respectfully submitted on this 8th day of August, 2001.

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